

**REVIEW OF THE GENUS *ACORDULECERA* SAY (HYMENOPTERA:  
PERGIDAE) OF THE WEST INDIES, AND THE FIRST RECORDS OF  
SYMPHYTA FROM MONTSERRAT AND ST. KITTS**

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*Abstract.*—Three species of the pergid genus *Acordulecera* Say are recorded from the West Indies, *A. montserratensis*, n. sp., from Montserrat, St. Kitts, and Dominica, *A. longica*, n. sp., from Dominica and Montserrat, and *A. insularis* Ashmead from St. Vincent and Dominica. *Acordulecera montserratensis* and *A. longica* are the first sawflies recorded from Montserrat, and *A. montserratensis* is the first sawfly known from St. Kitts. The species are keyed, described, illustrated, and separated from other species of *Acordulecera*.

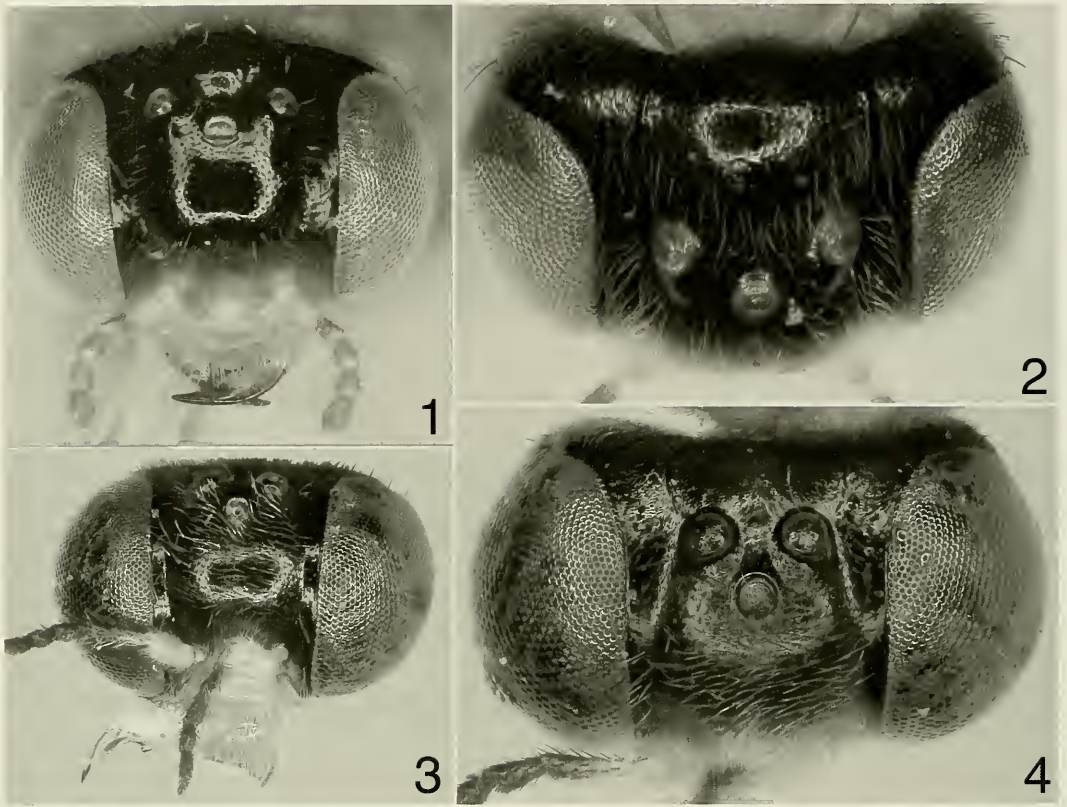
*Key Words:* St. Vincent, Dominica, Lesser Antilles, Neotropical, Symphyta

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Few sawflies are known from the West Indies and most are from the Lesser Antilles. Smith (1969) first reviewed the fauna, and no additions have been made since. Only three species, *Acordulecera insularis* Ashmead (Pergidae) from St. Vincent and Dominica, an undescribed species of *Acordulecera* Say (Pergidae) from Dominica (Smith 1969, 1990), and *Hemidianeura thoracica* Ashmead (Argidae), from Grenada (Smith 1969, 1992), have been recorded from the Lesser Antilles. Elsewhere, only *Sericoceros krugii* (Cresson) (Argidae) occurs in Puerto Rico, the U.S. Virgin Islands, and the Dominican Republic (Smith 1992), and three species of Diprionidae and two species of Siricidae occur in Cuba (Smith 1988). Specimens of undescribed species of *Acordulecera* Say from Montserrat and St. Kitts were brought to my attention by M.A. Ivie, Montana State University. These represent the first records of Symphyta from these islands. Here, I de-

scribe two new species and give a key to the *Acordulecera* of the West Indies.

*Acordulecera* Say is a large New World genus distributed from Canada to Argentina. Though 46 species have been described (Smith 1990, Smith and Janzen 2003), more than 200 species are possible. The genus was defined by Smith (1990). Food plants are not known for the West Indian species. Larvae of Nearctic *Acordulecera* feed on *Quercus* spp. (Fagaceae) and *Hicoria* spp. and *Juglans* spp. (Juglandaceae) (Smith 1979). Three species have been reared in Costa Rica, *A. binelli* Smith from *Posoqueria latifolia* (Rudge) Roem. & Schult. (Rubiaceae), *A. liami* Smith from *Erythroxylum havanense* Jacq. (Erythroxylaceae), and *A. dashielli* Smith from *Arrabidaea patellifera* (Schltdl.) Sandwith (Bigoniaceae) (Smith and Janzen 2003). Larvae of a related genus, *Tequius* Smith, feed on potato, *Solanum* spp. (Solanaceae) in Peru and Bolivia (Smith 1981, 1990).



Figs. 1-4. Head, 1, *Acordulecera montserratensis*, front view. 2, *A. montserratensis*, dorsal view. 3, *A. insularis*, front view. 4, *A. insularis*, dorsal view.

KEY TO SPECIES OF *ACORDULECERA* OF THE WEST INDIES

- 1. Third antennal segment subequal in length to fourth (Fig. 8); abdomen dorsally with transverse black bands; female lancet with laterally projecting, hooklike serrulae on apical half and spinelike annular armature (Fig. 11); male with antenna yellow, mesothorax, except sternum, black, genitalia in Fig. 19 . . . . . *A. montserratensis*, n. sp.
- Third antennal segment longer than fourth (Figs. 9-10); abdomen black with basal sterna pale orange or black with dorsal central orange area extending from base to about 6th segment; female lancet with short, rounded or truncated, ventrally projecting serrulae and annuli without spines or hairs (Figs. 12-13); male with antennal flagellum black, thorax mostly orange, genitalia in Figs. 17-18 . . . . . 2.
- 2. Ocelli large, hind ocelli separated by distance of less than diameter of one (Fig. 4); head shining; dorsum of abdomen with central orange area extending from base to about sixth segment; antenna short, about 0.6× head width; serrulae of fe-

- male lancet symmetrical, directed ventrally (Fig. 12); apex of male penis valve large, triangular (Fig. 17) . . . . . *A. insularis* Ashmead
- Ocelli small, hind ocelli separated by distance more than 2× greater than diameter of one; head dulled by fine irregular sculpturation (Figs. 5-7); abdomen black with basal sterna pale orange; antenna long, about 0.8× head width; serrulae of female lancet asymmetrical, directed anteriorly (Fig. 13); apex of male penis valve small, oval (Fig. 18) . . . . . *A. longica*, n. sp.

*Acordulecera montserratensis* Smith, new species

(Figs. 1-2, 8, 11, 14, 19)

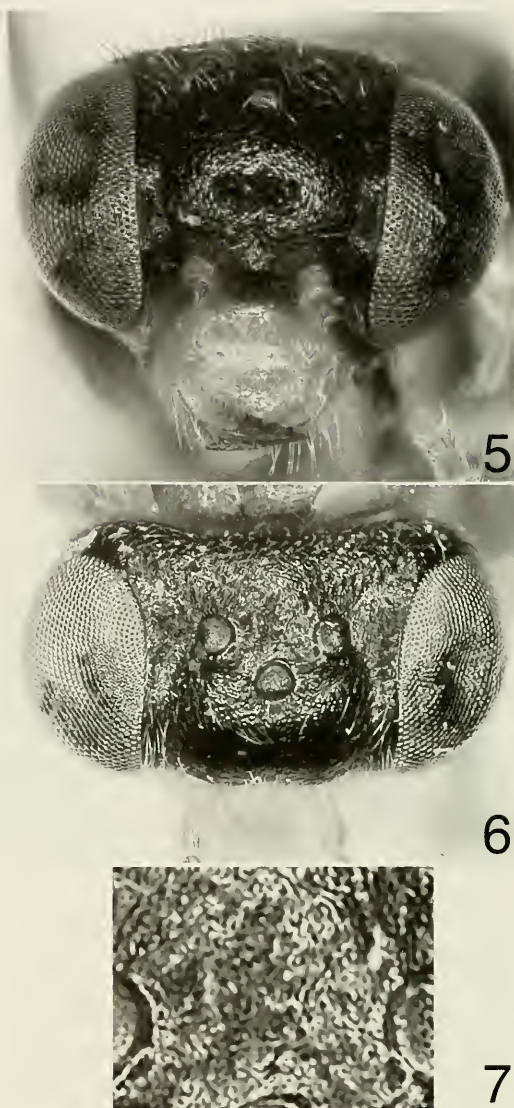
Female.—Length, 3.5-4.0 mm. Antenna white to yellowish. Head black with supra-clypeal area, clypeus and mouthparts white; apex of mandible black. Thorax orange with tegula, spot on extreme upper corner of mesepisternum, and metapleuron gray to

black. Legs white with apical 3 tarsal segments dark brown, darker to black on outer surfaces. Abdomen, except first segment, dorsally with broad, black transverse bands, bands narrower at center, wider laterally, narrower alternating bands pale orange; laterally and ventrally pale orange except for central black area on apical sternite. Wings hyaline, stigma and venation black.

Antenna short, length  $0.6\times$  head width and  $1.3\times$  lower interocular distance; segments 3–6 each  $2\times$  or less longer than broad and subequal in length; apical segment slightly longer and broader than others and without long apical seta (Fig. 8). Right mandible without carina on lower margin. Head shining, from above narrow behind eyes (Fig. 2); distances between eye and hind ocellus, between hind ocelli, and between hind ocellus and posterior margin of head as 1.0:2.0:2.0; ocelli small, distance between hind ocelli more than  $2\times$  diameter of an ocellus; postocellar area  $1.8\times$  broader than long. Eyes converging below (Fig. 1), lower interocular distance  $0.9\times$  eye length, upper interocular distance subequal to eye length. Hindbasitarsus  $1.2\times$  length of remaining tarsal segments combined. Sheath short, rounded in lateral view, in dorsal view with thick, laterally projecting scopae (Fig. 14). Lancet short, with about 12 serrulae, basal 4 serrulae symmetrical, directed ventrally, apical 8 serrulae hooklike, without subbasal teeth, and directed anteriorly and laterally; annuli with spinelike armature (Fig. 11).

Male.—Length, 2.7 mm. Color as for female except antenna yellow; thorax black with propleuron, pronotum, tegula, anterior edge of mesepisternum, mesosternum, anterior spot on mesoprescutum pale orange; abdomen mostly dark brown with apical margins of segments, terga 2–6 laterally, and basal 4–5 sterna light orange. Antennal length subequal to distance between eyes. Other characters as for female. Genitalia in Fig. 19; parapenis evenly rounded on meson; penis valve oval.

Type material.—Holotype: ♀, labeled



Figs. 5–7. Head, *Acordulecera longica*. 5, Front view. 6, Dorsal view. 7, Close-up of area between and behind ocelli showing sculpturation.

“Montserrat, Beattie House, nr. Cassava Ghaut, 14–30 June 2002, Malaise trap, 632 ft., M. A. Ivie,  $16^{\circ}45.908'N$ ,  $62^{\circ}12.953'W$ .” In the National Museum of Natural History, Smithsonian Institution, Washington, DC (USNM). Paratypes: Same data as for holotype (10 ♀); Montserrat: Beattie House,  $16^{\circ}45'N$ ,  $62^{\circ}12.95'W$ , 08–17 Apr. 2002, 632 ft., A. Krakower, Malaise (3 ♀), same except 18 Mar – 04 April 2002 (1 ♀), same

except 05–15 Feb. 2002 (1 ♂), same except 04–23 March 2002 (2 ♀); Montserrat: hill above Hope Ghaut, 16° 45.169'N, 62° 12.736'W, 16 May 2002, 1,057 ft., K. Markse, canopy fogging (1 ♀). Deposited in the collections of Montana State University, Bozeman; N. M. Schiff, Stoneville, MS; and USNM.

Other specimens examined.—ST. KITTS: St. Kitts, Milikin Estate, 17°19.607'N, 62°44.850'W, 02–04 July 2003, 1,200 ft., K. A. Markse, P.A.D. Orchard, Malaise trap (1 ♀). DOMINICA: Parish of St. Mark, 4 km N Soufriere, Malaise in dry wash of deciduous forest 75 m, 17–19 March 2003, M. E. Irwin, M. B. Shepard, E. Benson, G. Crmer, 15°14.3'N, 61°22'W (1 ♂); Clarke Hall, 21–31 Jan. 1965, W. W. Wirth, light trap, Bredin-Archbold Smithsonian Bio. Surv. Dominica (1 ♂); S. Chiltern, 1,600', II-19-65, H. E. Evans, Bredin-Archbold Smithsonian Bio. Surv. Dominica (1 ♂). The specimens from Clarke Hall and S. Chiltern, Dominica, were recorded as *A. insularis* by Smith (1969).

**Etymology.**—The species name is from Montserrat, the locality of the type series.

**Discussion.**—Though specimens from Montserrat, St. Kitts, and Dominica are identical, I prefer to use only the specimens from Montserrat in the type series. The female from St. Kitts has the dorsum of the abdomen more solidly black than the more striped appearance in most specimens from Montserrat. The specimens from Dominica are all males, but they appear identical to the single male associated with females from Montserrat; they range in length from 2.7–3.0 mm.

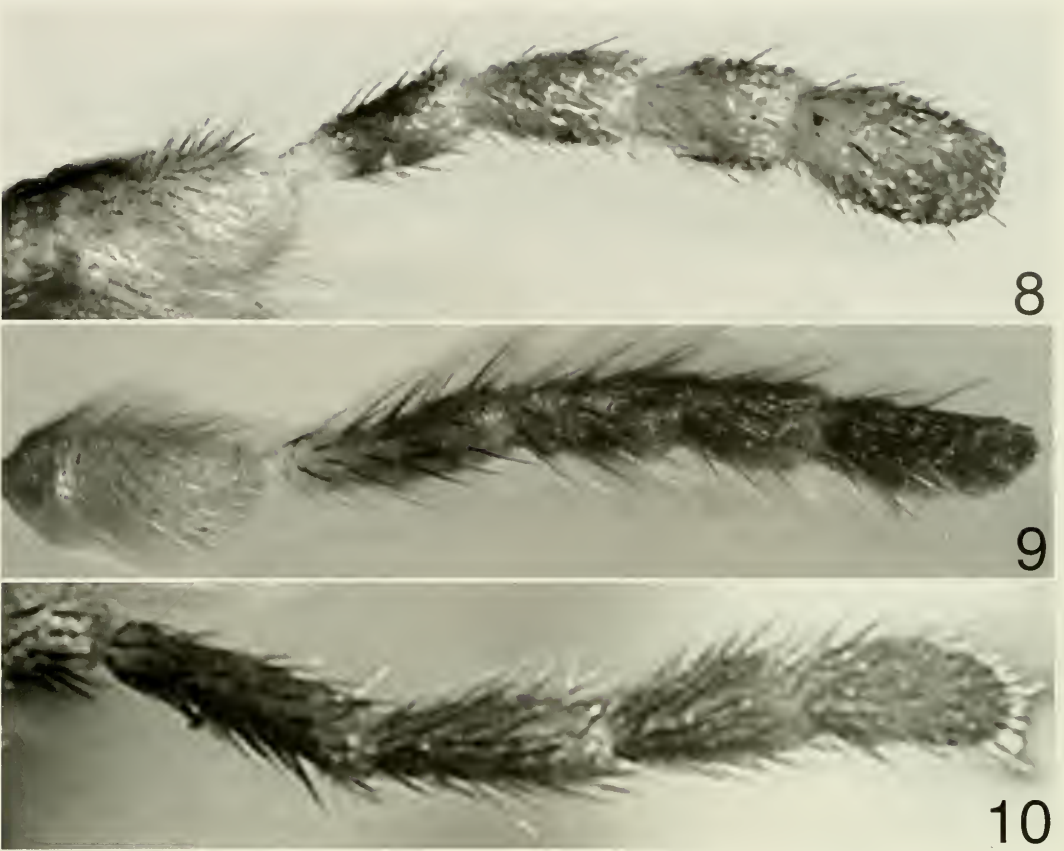
There are no described species of *Acordulecera* with the long, hooklike, laterally projecting serrulae of the lancet, although I have seen undescribed species with similar lancets from southern Brazil, northern Argentina, and Costa Rica. The unusual lancet will immediately separate *A. montserratensis* from all other described species of the genus. Of the described species of *Acordulecera*, *A. globulicornis* (Konow) from

Peru and *A. cervicata* (Konow) from “Itaituba” are closest in coloration, but *A. globulicornis* has long antennae, nearly as long as the head width, and with all segments much longer than broad, and *A. cervicata* has the abdomen orange with the apical two segments and sheath black. *Acordulecera vericulata* (Konow) from Peru has similar serrulae, but they are straighter, not hooklike, directed ventrally, the lancet is much longer with more than 20 serrulae, and the sheath is simple, without scopae.

Similar species, e.g., species with similar lancets from various parts of the Neotropics, raises the question that this may be an introduction in the West Indies. However, the specimens I have seen differ in other characteristics from the West Indian specimens, such as color, sheath shape, and antennal structure, and none compare conspecifically. Being such a large genus in the Neotropics, further investigations are needed to confirm *A. montserratensis* as an endemic species.

A single male is associated with specimens collected on Montserrat. It differs in color from the female by the mostly black mesothorax and abdomen. Males of *A. insularis* and *A. longica* have the thorax mostly orange and are more similar to their respective females. The genitalia of *A. montserratensis* differs from the other two species by the evenly curved inner margin of the parapsis and more oval penis valve (see Figs. 17–19).

This species and *A. longica* are the first records of Symphyta from Montserrat and St. Kitts. No sawflies were mentioned in the recent treatment of the insect fauna of Montserrat (Stevens and Waldmann 2001). The Malaise trap in which most of the specimens of *A. montserratensis* were collected was located about 30 m away from a house in secondary moist tropical forest on the west side of Montserrat, next to the forest reserve of the Centre Hills in the upper part of Woodlands (M. Ivie, personal communication). One specimen was collected at a higher altitude by canopy fogging.



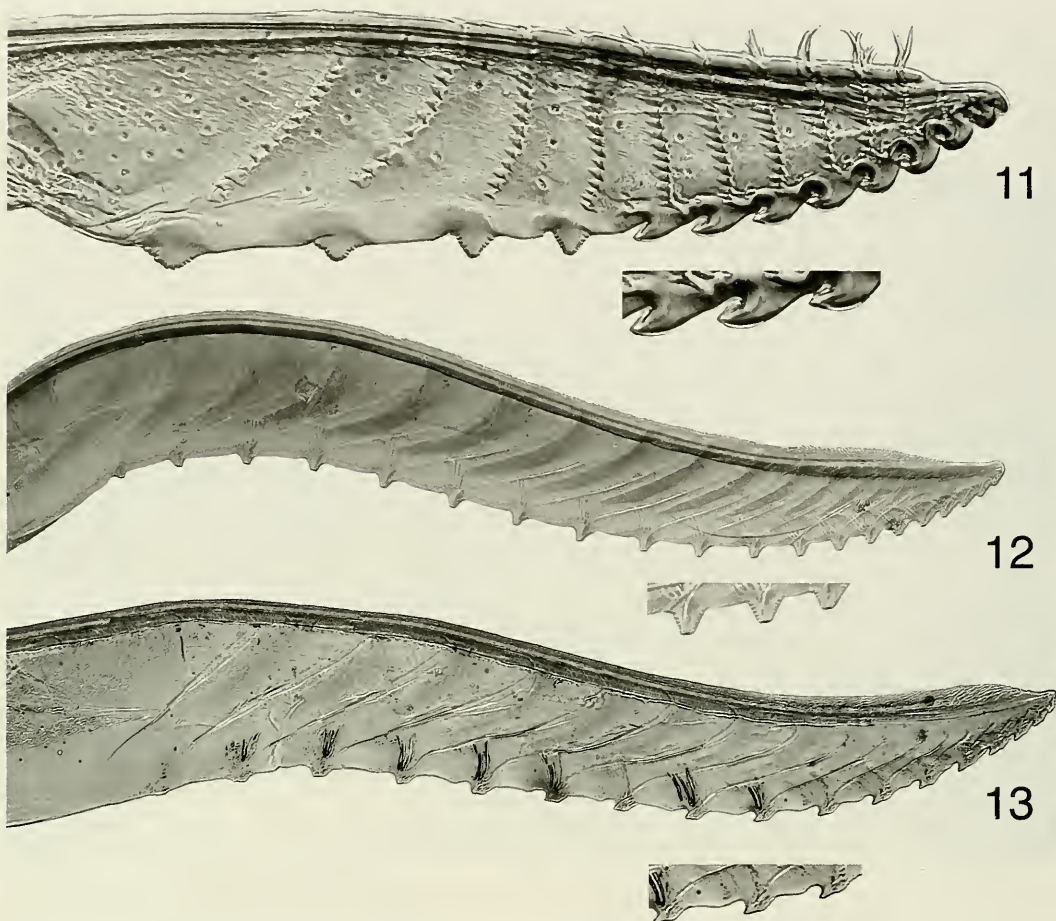
Figs. 8–10. Antennae. 8, *Acordulecera montserratensis*. 9, *A. insularis*. 10, *A. longica*.

*Acordulecera insularis* Ashmead  
(Figs. 3–4, 9, 12, 15, 17)

*Acordulecera insularis* Ashmead 1900: 298.—Smith 1969: 541.—Smith 1990: 179, fig. 465.

Female.—Length, 3.5 mm. Antenna with scape and pedicel white, flagellum black. Head black with supraclypeal area, clypeus, and mouthparts white; apex of mandible black. Thorax orange with tegula and metapleuron black; pronotum and mesoscutellum pale orange to white; lateral lobes dark orange to infusate. Legs white with extreme tip of hind tibia and tarsi infusate. Abdomen black dorsally with central, longitudinal orange spot extending from base to about 6th segment; apex of 8th segment whitish; laterally and ventrally pale orange; apical margin of sheath black.

Antenna short, length  $0.6\times$  head width and  $1.4\times$  lower interocular distance; 3rd segment nearly  $1.5\times$  length of 4th segment; 4th and 5th segments subequal in length; 6th segment longer than 5th; segments more than  $2\times$  longer than broad; apical segment without long apical seta (Fig. 9). Right mandible without carina on lower margin. Head shining, from above strongly narrowing behind eyes (Fig. 4); distances between eye and hind ocellus, between hind ocelli, and between hind ocellus and posterior margin of head as 1.0:0.8:1.2; ocelli large, distance between hind ocelli less than diameter of an ocellus; postocellar area  $2.3\times$  broader than long. Eyes slightly converging below, lower interocular distance  $0.7\times$  eye length, upper interocular distance  $0.8\times$  eye length (Fig. 3). Hindbasitarsus  $1.4\times$  longer than length of remaining tarsal



Figs. 11–13. Female lancets, entire lancet above, close-up of central serrulae below. 11, *Acordulecera montserratensis*. 12, *A. insularis*. 13, *A. longica*.

segments combined. Sheath rounded at apex in lateral view; in dorsal view, of similar width throughout and bluntly rounded at apex, without laterally projecting scopae (Fig. 15). Lancet long, with about 19 widely separated serrulae, each serrula long, symmetrical, directed downward, nearly truncate at apex, and with several very fine anterior and posterior subbasal teeth; annuli without spines or hairs (Fig. 12).

Male.—Length, 2.8–3.0 mm. Color similar to that of female. Genitalia as in Fig. 17; inner margin of parapenis concave and rounded medially; penis valve apex large, triangular; harpe with long, stiff hairs.

Type.—Ashmead described the species

from “St. Vincent. Described from one ♀ specimen, taken at an elevation of 2000 feet.” The holotype (examined) is in The Natural History Museum, London, BM 1.491, labeled “St. Vincent, W.I., H. H. Smith,” “2000 feet,” “W. Indies 99–331.” The antennae are missing. In 1990, I mentioned “Ashmead described this species from two females. One specimen in London is hereby designated lectotype, and the other specimen, in Washington, is designated paralectotype. Both have the same data and the specimens are conspecific.” Because Ashmead stated he had one female, the lectotype designation is incorrect.

Material examined.—DOMINICA:

d'LeauGommier, 15 Feb. 1965, W. W. Wirth (1 ♀); DleauGommier, 1,400', II-15-65, H. E. Evans (1 [abdomen missing]); DleauGommier, 1,700', Central Forest Res., May 26, 1966, R. J. Gagné (1 ♂); Pont-Casse, 1.7 mi e, 10-III-65, W. W. Wirth (1 ♂), same except 12-III-65 (1 ♂). ST. VINCENT: Holotype data above. [Note: Dominican names given as on labels.]

Discussion.—The short antennae with the apical segment lacking a long apical seta, the lack of scopae on the sheath, large ocelli with the distance between the hind ocelli less than the diameter of an ocellus, lancet, male genitalia, and color separate this species from described Neotropical species.

***Acordulecera longica* Smith, new species**  
(Figs. 5–7, 10, 13, 16, 18)

*Acordulecera* sp.: Smith 1969: 541, 542.

Female.—Length, 3.0 mm. Antenna with scape and pedicel white, flagellum black. Head black with clypeus and mouthparts white. Thorax black with tegula, pronotum, mesoprescutum, mesoscutellum, lower half of mesepisternum, and all mesosternum orange. Abdomen black with basal sterna orange. Legs orange with apical 3 tarsal segments infusate. Wings hyaline, veins black.

Antenna long, length about  $0.8\times$  head width and  $1.7\times$  lower interocular distance; 3rd segment  $1.2\times$  length of 4th segment; segments gradually decreasing in length to apex; each segment more than  $2\times$  longer than broad; apical segment without long apical seta (Fig. 10). Right mandible without carina on lower margin. Head dull, shagreened, with fine irregular sculpturation, not shining (Figs. 6–7); from above strongly narrowing behind eyes (Fig. 7); distances between eye and hind ocellus, between hind ocelli, and between hind ocellus and posterior margin of head as 1.0:1.5:1.5; ocelli small, distance between hind ocelli more than  $2\times$  diameter of an ocellus; postocellar area  $2.0\times$  broader than long. Eyes slightly

converging below (Fig. 5); lower interocular distance  $0.8\times$  eye length; upper interocular distance subequal to eye length. Hindbasitarsus  $1.3\times$  length of remaining tarsal segments combined. Sheath rounded in lateral view; nearly uniformly slender in dorsal view, slightly tapering at apex, with short, laterally projecting scopae shorter than central part of sheath (Fig. 16). Lancet with about 16 serrulae, each serrula short, asymmetrical, without subbasal teeth, truncated at apex, and directed anteriorly; annuli without spines or hairs (Fig. 13).

Male.—Length, 3.0 mm. Color similar to that of female except mesonotum black. Genitalia as in Fig. 18; parapenis broadly rounded medially; harpe with rounded ridgelike sculpturing and with short, flexuous hairs; apex of penis valve small, oval.

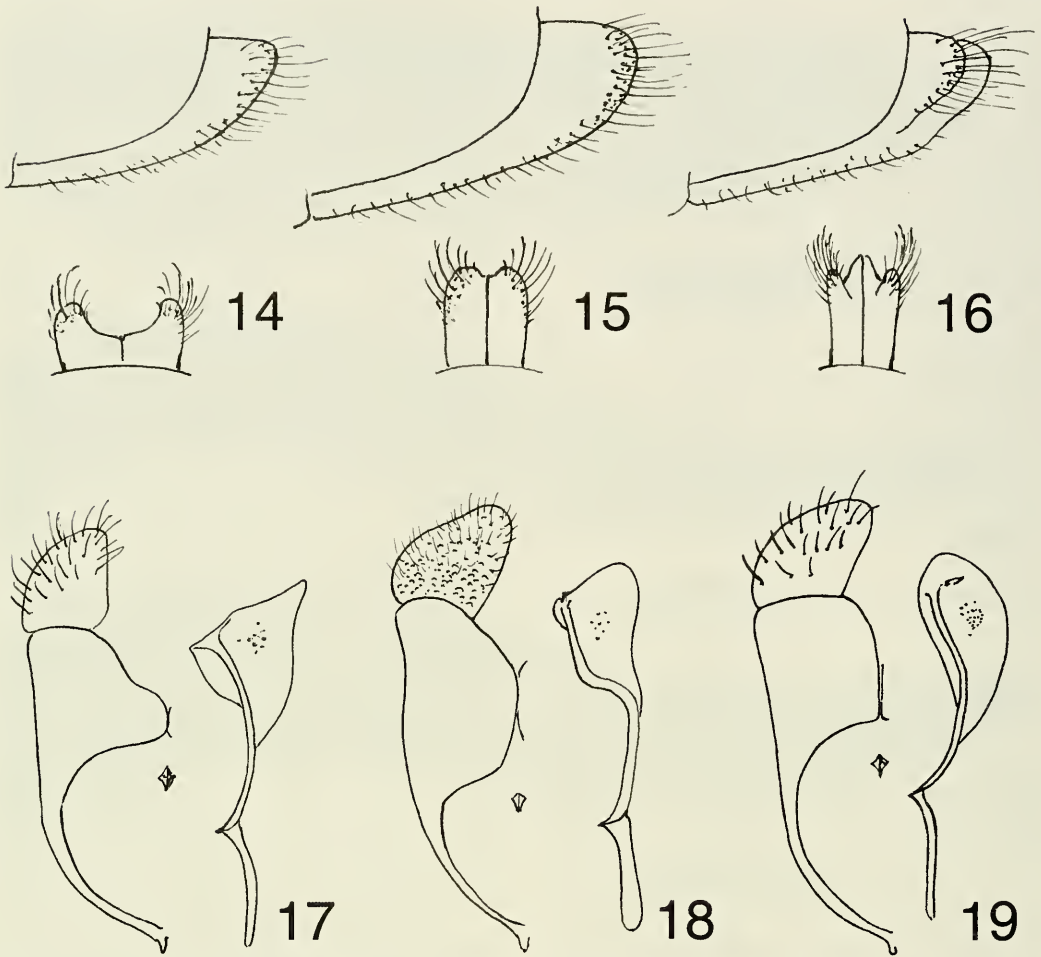
Holotype.—♀, labeled "Dominica WI, June 15, '41, 800', in forest, R. G. Fenah." (USNM).

Other specimens examined.—DOMINICA: 1.5 mi. N. Pont Cassé, 1,200', II-12-25-65, H. E. Evans (1 ♂); 2,400', Freshwater L., II-21-1964, collected at light trap, Dale F. Bray (1 ♂, USNM). MONTSERRAT: hill above Hope Ghaut,  $16^{\circ} 45.169'N$ ,  $62^{\circ} 12.736'W$ , 16 May 2002, 1,057 ft., K. Markse, canopy fogging (1 ♀).

Etymology.—The name refers to the relatively long antennae compared to the shorter antennae of the other two West Indian species.

Discussion.—This is the species I referred to as "*Acordulecera* sp." in 1969 from Dominica. The Montserrat specimen is the only additional specimen I have seen since 1969. Both males from Dominica resemble the female, but due to the risk of associating sexes, I prefer not to designate them as paratypes. The female from Montserrat is identical to the holotype, but I prefer not to designate it a paratype. This and a female of *A. montserratensis* were collected on the same date during canopy fogging.

The long antennae lacking a long apical seta on the apical segment, slender sheath



Figs. 14–19. 14–16, Female sheaths, lateral view above, dorsal view below. 14, *Acordulecera montserratensis*. 15, *A. insularis*. 16, *A. longica*. 17–19, Male genitalia, ventral aspect of left half of genital capsule on left, lateral view of penis valve on right. 17, *A. insularis*. 18, *A. longica*. 19, *A. montserratensis*.

with small, laterally projecting scopae, lancet, color of thorax, and black abdomen with only basal sterna pale orange separate this species from the described Neotropical species of *Acordulecera*.

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